

AMENDMENTS TO THE CLAIMS**Listing of Claims**

This listing of the claims will replace all prior versions, and listings, of claims in this application.

1 – 59. (**Cancelled**)

60. (**Currently Amended**) A method of identifying compounds that bind to a leukotriene A₄ (LTA₄) hydrolase comprising the amino acid sequence of SEQ ID NO:1, the method comprising the steps of:

(a) crystallizing a purified LTA₄ hydrolase ~~comprising the amino acid sequence of SEQ ID NO:1 together with bestatin~~ to form an LTA₄ hydrolase crystal, wherein crystallization is performed as liquid liquid diffusion in a capillary using equal volumes of a buffer: enzyme solution comprising:

i) a buffer solution comprising about 28% PEG8000, about 0.1 M Na-acetate, about 0.1 M imidazole at a pH of about 6.8 and with about 5 mM YbCl₃ as an additive; and

ii) an enzyme solution comprising about 5 mg/ml LTA₄ hydrolase comprising the amino acid sequence of SEQ ID NO:1 in about 10 mM Tris-HCl at a pH of about 8, supplemented with about 1 mM bestatin;

(b) determining the atomic coordinates of said LTA₄ hydrolase crystal; and

(c) screening the atomic coordinates of a set of candidate compounds against the atomic coordinates of said LTA₄ hydrolase crystal obtained in step a) to identify compounds that bind to the LTA₄ hydrolase.

61. (**Previously Presented**) The method of claim 60, wherein the LTA₄ hydrolase is purified by adsorption chromatography on hydroxyapatite and anion-exchange chromatography.

62-67. (**Cancelled**)

68. **(Previously Presented)** The method of claim 60, wherein the atomic coordinates of said LTA₄ hydrolase crystal correspond to the atomic coordinates defining atom 1 to atom 4876 as set forth in Table 9.

69. **(Cancelled)**

70. **(Currently Amended)** A method of designing an inhibitor or agonist of LTA₄ hydrolase comprising the amino acid sequence of SEQ ID NO:1, the method comprising the steps of:

(a) crystallizing a purified LTA₄ hydrolase ~~comprising the amino acid sequence of SEQ ID NO:1 together with bestatin~~ to form a crystal and thereafter determining its conformational structure, wherein crystallization is performed as liquid liquid diffusion in a capillary using equal volumes of a buffer: enzyme solution comprising:

i) a buffer solution comprising about 28% PEG8000, about 0.1 M Na-acetate, about 0.1 M imidazole at a pH of about 6.8 and with about 5 mM YbCl₃ as an additive; and

ii) an enzyme solution comprising about 5 mg/ml LTA₄ hydrolase comprising the amino acid sequence of SEQ ID NO:1 in about 10 mM Tris-HCl at a pH of about 8, supplemented with about 1 mM bestatin;

(b) identifying at least one compound that is at least in part complementary to the LTA₄ hydrolase by the use of the conformational structure of the crystal complex obtained in step a);

(c) soaking the crystallized LTA₄ hydrolase obtained in step a) with a solution of a compound identified in step b) to obtain a complex of the crystal of said LTA₄ hydrolase and said compound; and

(d) performing X-ray crystallography of the crystal complex of LTA₄ hydrolase and said compound to determine the structure thereof, thereby identifying the compound as an inhibitor or agonist of LTA₄ hydrolase.

71. **(Previously Presented)** The method of claim 70, wherein the LTA₄ hydrolase is purified by adsorption chromatography on hydroxyapatite and anion-exchange chromatography.

72. **(Previously Presented)** The method of claim 70, wherein said compound is an inhibitor of LTA₄ hydrolase.

73-75. **(Cancelled)**

76. **(Previously Presented)** The method of claim 70, wherein the atomic coordinates of said LTA₄ hydrolase crystal correspond to the atomic coordinates defining atom 1 to atom 4876 as set for in Table 9.

77. **(Cancelled)**

78. **(Previously Presented)** The method of claim 70, further comprising the step of refining the structure of said compound obtained in step d) via computer modeling using data obtained from the X-ray crystallography in step d) and repeating steps b)-d).

79. **(Previously Presented)** The method of claim 70, wherein the complex obtained in step c) comprises bestatin.

80-86. **(Cancelled)**